Cockroaches, Pesticide Use, and Children's Lung Function in an Arid Community

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The El Paso Children's Health Study examined environmental risk factors for allergy and asthma among fourth- and fifth-grade schoolchildren living in a major United States-Mexico border city. While the principal focus of the study was the adverse health effects of exposures to mobile source emissions, we also examined asthma-related risk factors in the indoor environment. During February 2001, we obtained complete questionnaire information and acceptable lung function data for 1752 children. In this arid community, only 21% of the children lived in a home with a self-report of cockroaches, and 86% of these families reported pesticide use in the last year. Lung function measures were adjusted for sex, race, height, weight, age, interactions between sex and height and weight and Hispanic ethnicity, parental education, questionnaire language, duration of residency, atopy, and current asthma. Among self-reported non-users of pesticides, the presence of cockroaches in the home was associated with a 5.2% lower peak expiratory flow (95% confidence interval –7.7% to –2.7%). When cockroaches were observed in the home, recent pesticide use was associated with a 9.2% higher peak expiratory flow (95% confidence interval +6.3% to +12.1%). In homes without reported cockroaches, pesticide use was associated with a smaller, 1.4% improvement on peak flow (95% confidence interval +0.3% to +2.4%). These effects on lung function were still present even after the exclusion of children with a current physician's diagnosis of asthma. Thus, practical levels of cockroach control appear to have a beneficial effect on all children's pulmonary function levels. This abstract does not necessarily represent EPA policy.